Patent claims

1. A device for extending bones, with two elements (1, 2) that can be moved in relation to one another and that are interconnected via at least one drive element (7), characterized in that, when the two elements (1, 2) are moved axially in relation to one another, they are guided in a manner secure against relative radial torsion.

2. The device as claimed in claim 1, characterized in that the first element (1) is configured as a receiving sleeve (5) in which at least one radial locking bore (4) is provided at one end.

3. The device as claimed in claim 2, characterized in that the drive element (7) is fitted as electric motor (8) in the receiving sleeve (5) and drives, if appropriate via a drive shaft (10) or directly, a planetary roller system (11) or a thread or spindle system.

4. The device as claimed in claim 3, characterized in that at least one force sensor (13) and/or displacement sensor (13) is assigned to the drive element (7), to the electric motor (8), to the drive shaft (10) and/or to the planetary roller system (11) or spindle system, which sensor (13) is connected for example by spindle systems to the drive element (7), in particular the electric motor (8) with an electronics unit (6).

5. The device as claimed in at least one of claims 1 through 4, characterized in that an inner cross section (17) of the element (1) in the area between electric motor (8) and planetary roller system (11) has a polygonal, rectangular or multi-cornered configuration as a guide area (15) for the second element (2).

6. The device as claimed in at least one of claims 1 through 5, characterized in that an outer cross section (18) of the element (2) at least partially corresponds to the inner cross section (17) of the first element (1) in the guide area (15) and has a polygonal, rectangular or multi-cornered configuration.

7. The device as claimed in at least one of claims 3 through 6, characterized in that an inner cross section of the second element (2) is configured as a cylindrical bore which is provided in its inner circumferential surface with a thread (21) which engages with the planetary roller system (11) or thread or spindle system adjacent to the drive shaft (10).

8. The device as claimed in at least one of claims 1 through 7, characterized in that the second element (2) has at least one radial locking bore (4) at its end.

9. The device as claimed in at least one of claims 1 through 8, characterized in that, at least at one end, the second element (2) has a polygonal configuration in the area of the outer cross section (18), which engages with an exact

fit in the corresponding polygonal inner cross section (17) of the guide area (15) of the first element (1), and, in the end area (14) of the first element (1), a correspondingly configured guide element (16) with polygonal inner cross section (17) ensures that the second element (2) is guided in a manner secure against radial torsion, at least one seal or at least one sealing element (22) being inserted between the elements (1, 2).

10. The device as claimed in at least one of claims 1 through 9, characterized in that, at one end lying remote from the area (14) of the first element (1), an energy and/or data transmission unit (3), in particular at least one coil for inductive energy and/or data transmission, is inserted which acts in two directions and in a contactless manner and is connected to the drive element (7) and/or the electronics unit (6).

11. The device as claimed in at least one of claims 1 through 10, characterized in that the element (2) engages as an outer sleeve over the element (1) and receives the element (1) inside it and guides it in a manner secure against torsion.